

§ 157.130

(b) Each cargo tank must be designed to allow the level of crude oil in the tank to be determined by:

(1) Hand dipping at the aftermost portion of the tank and three other locations; or

(2) Any other means accepted by the Commandant.

(c) Each stripping system must have at least one of the following devices for stripping oil from each cargo tank:

(1) A positive displacement pump.

(2) A self-priming centrifugal pump.

(3) An eductor

(4) Any other device accepted by the Commandant.

(d) There must be a means in the stripping system piping between the device under paragraph (c) of this section and each cargo tank to isolate each tank from the device.

(e) If the stripping system has a positive displacement pump or a self-priming centrifugal pump, the stripping system must have the following:

(1) In the stripping system piping:

(i) A pressure gauge at the inlet connection to the pump; and

(ii) A pressure gauge at the discharge connection to the pump.

(2) At least one of the following monitoring devices to indicate operation of the pump.

(i) Flow indicator.

(ii) Stroke counter.

(iii) Revolution counter.

(f) If the stripping system has an eductor, the stripping system must have:

(1) A pressure gauge at each driving fluid intake and at each discharge; and

(2) A pressure/vacuum gauge at each suction intake.

(g) The equipment required under paragraphs (e) and (f) of this section must have indicating devices in the cargo control room or another location that is accepted by the Commandant.

[CGD 77-058b, 45 FR 43709, June 30, 1980, as amended by CGD 82-28, 50 FR 11627, Mar. 22, 1985]

§ 157.130 Crude oil washing with more than one grade of crude oil.

If a tank vessel having a COW system under §§ 157.10(e), 157.10a(a)(2), or 157.10c(b)(2) carries more than one grade of crude oil, the COW system must be capable of washing the cargo

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tanks with the grades of crude oil that the vessel carries.

[CGD 82-28, 50 FR 11627, Mar. 22, 1985]

§ 157.132 Cargo tanks: Hydrocarbon vapor emissions.

Each tank vessel having a COW system under § 157.10a(a)(2) or § 157.10c(b)(2) without sufficient segregated ballast tanks or dedicated clean ballast tanks to allow the vessel to depart from any port in the United States without ballasting cargo tanks must have—

(a) A means to discharge hydrocarbon vapors from each cargo tank that is ballasted to a cargo tank that is discharging crude oil; or

(b) Any other means accepted by the Commandant that prevents hydrocarbon vapor emissions when the cargo tanks are ballasted in port.

[CGD 77-058b, 45 FR 43709, June 30, 1980, as amended by CGD 82-28, 50 FR 11628, Mar. 22, 1985]

§ 157.134 Cargo tank drainage.

Each cargo tank must be designed for longitudinal and transverse drainage of crude oil to allow the tank vessel to pass the inspections under § 157.140.

§ 157.136 Two-way voice communications.

Each tank vessel having a COW system under § 157.10(e), § 157.10a(a)(2), or § 157.10c(b)(2) must have a means that enables two-way voice communications between the main deck watch required under § 157.168 and each cargo discharge control station.

[CGD 82-28, 50 FR 11628, Mar. 22, 1985]

§ 157.138 Crude Oil Washing Operations and Equipment Manual.

(a) Each *Crude Oil Washing Operations and Equipment Manual* must include the following information:

(1) The text of the Annex of Resolution 15 of the MARPOL 73/78.

(2) A line drawing of the tank vessel's COW system showing the locations of pumps, piping, and COW machines.

(3) A description of the COW system.

(4) The procedure for the inspection of the COW system during COW operations.